

CLAIM AMENDMENTS

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
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6. (canceled)
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15. (canceled)
16. (canceled)
17. (canceled)
18. (canceled)
19. (canceled)
20. (canceled)

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21. (canceled)

22. (canceled)

23. (canceled)

24. (canceled)

25. (canceled)

26. (canceled)

27. (canceled)

28. (canceled)

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31. (canceled)

32. (canceled)

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39. (canceled)

40. (new) A power end seal for use in sealing gearboxes of heavy duty  
reciprocating pumps, comprising:

an asymmetrical u-shaped, circular seal body having an inner wall portion, an outer wall portion and a seat portion, wherein said outer wall portion has a section equal in length to the length of said inner wall portion and also has an extended length section;

said seat portion being perpendicularly affixed to a lower end of the inner wall portion and a lower end of the outer wall portion, with the axial alignment of the inner wall portion being parallel to the axial alignment of the outer wall portion;

an open, asymmetrical u-shaped channel portion defined by an outer diameter surface of the inner wall portion, an inner diameter surface of the outer wall portion and a top surface of the seat portion;

a plurality of arched ribs, each of said ribs being mounted within said open, asymmetrical u-shaped channel portion, wherein each of said ribs is attached to the outer diameter surface of the inner wall portion and, at a circumferentially offset location, to the equal length section of the inner diameter surface of the outer wall portion, and wherein a bottom surface of each of said ribs is attached to the top surface of the seat portion, whereby the inner wall portion and the outer wall portion can selectively expand and selectively contract in relation to the forces being applied to said seal body;

a dynamic seal in the form of a filled composite material having an elastomer as one of its ingredients, and affixed to the inner diameter surface of said inner wall portion and to said seat portion;

an outer diameter elastomer static seal, including an outer diameter surface of the outer wall portion and a bottom surface of the seat portion; and

a first lip profile affixed to an inner diameter surface of an upper end of said inner wall portion and extending radially inwardly and a second lip profile affixed to an outer diameter surface of an upper end of said outer wall portion and extending radially outwardly, such that the asymmetrical u-shaped, circular seal body includes the first lip profile affixed to the upper end of the dynamic seal and the second lip profile affixed to the upper end of the extended length section of the outer diameter elastomer static seal.

41. (new)           The power end seal for use in sealing gearboxes of heavy duty reciprocating pumps, as defined in claim 40, wherein the dynamic seal in the form of a filled composite material has as another of its ingredients PTFE.
42. (new)           The power end seal for use in sealing gearboxes of heavy duty reciprocating pumps, as defined in claim 40, wherein the dynamic seal in the form of a filled composite material has as another of its ingredients bronze filled PTFE.
43. (new)           The power end seal for use in sealing gearboxes of heavy duty reciprocating pumps, as defined in claim 40, wherein the dynamic seal in the form of a filled composite material has as another of its ingredients carbon filled PTFE.
44. (new)           The power end seal for use in sealing gearboxes of heavy duty reciprocating pumps, as defined in claim 40, wherein the dynamic seal in the form of a filled composite material has as another of its ingredients aramid fiber filled HNBR.
45. (new) A power end seal for use in sealing gearboxes of heavy duty reciprocating pumps, comprising:

an asymmetrical u-shaped, circular seal body having an inner wall portion, an outer wall portion and a seat portion, wherein said outer wall portion has a section equal in length to the length of said inner wall portion and also has an extended length section;

said seat portion being perpendicularly affixed to a lower end of the inner wall portion and a lower end of the outer wall portion, with the axial alignment of the inner wall portion being parallel to the axial alignment of the outer wall portion;

an open, asymmetrical u-shaped channel portion defined by an outer diameter surface of the inner wall portion, an inner diameter surface of the outer wall portion and a top surface of the seat portion;

a plurality of arched ribs, each of said ribs being mounted within said open, asymmetrical u-shaped channel portion, wherein each of said ribs is attached to the outer diameter surface of the inner wall portion and, at a circumferentially offset location, to the equal length section of the inner diameter surface of the outer wall portion, and wherein a bottom surface of each of said ribs is attached to the top surface of the seat portion, whereby the inner wall portion and the outer wall portion can selectively expand and selectively contract in relation to the forces being applied to said seal body;

a dynamic seal in the form of a filled composite material having a plastic as one of its ingredients, and affixed to the inner diameter surface of said inner wall portion and to said seat portion;

an outer diameter elastomer static seal, including an outer diameter surface of the outer wall portion and a bottom surface of the seat portion; and

a first lip profile affixed to an inner diameter surface of an upper end of said inner wall portion and extending radially inwardly and a second lip profile affixed to an outer diameter surface of an upper end of said outer wall portion and extending radially outwardly, such that the asymmetrical u-shaped, circular seal body includes the first lip profile affixed to the upper end of the dynamic seal and the second lip profile affixed to the upper end of the extended length section of the outer diameter elastomer static seal.

46. (new)           The power end seal for use in sealing gearboxes of heavy duty reciprocating pumps, as defined in claim 45, wherein the dynamic seal in the form of a filled composite material has as another of its ingredients PTFE.
47. (new)           The power end seal for use in sealing gearboxes of heavy duty reciprocating pumps, as defined in claim 45, wherein the dynamic seal in the form of a filled composite material has as another of its ingredients bronze filled PTFE.
48. (new)           The power end seal for use in sealing gearboxes of heavy duty reciprocating pumps, as defined in claim 45, wherein the dynamic seal in the form of a filled composite material has as another of its ingredients carbon filled PTFE.
49. (new)           The power end seal for use in sealing gearboxes of heavy duty reciprocating pumps, as defined in claim 45, wherein the dynamic seal in the form of a filled composite material has as another of its ingredients aramid fiber filled HNBR.